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Jochen Junkawitsch

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EXAMINER

JACKSON, JAKIEDA R

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/631,985	Applicant(s) JUNKAWITSCH ET AL.	
	Examiner Jakieda R. Jackson	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 17, 2007 has been entered.

Response to Arguments

2. Applicant's have amended the claims to recite an outgoing system voice prompt. Applicant's arguments are now moot in view of new grounds of rejections.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-5, 10-11, 13-14, 19 and 21-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Although a system voice

Art Unit: 2626

prompt is taught, the specification does not specifically teach the voice prompt is an "outgoing system voice prompt".

Claims 1, 10-11 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Although the specification teaches user-input command, it does not specifically teach that the commands are user-generated.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 4, 9-13, 18-19 and 20-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al. (PGPUB 2004/0226459), hereinafter referenced as Hill in view of Jones et al. (PGPUB 2007/0198267), hereinafter referenced as Jones in further view of Johnston (USPN 6,603,836).

Regarding claims **1, 11 and 19**, Hill disclose a method, recognizer and system, hereinafter referenced as a method, of suppressing speech recognition errors in a speech recognition system in which an input signal includes an echo from a outgoing system voice prompt combined with user input speech, said method comprising the steps of:

supplying the input signal to a speech recognizer (speech recognition engine) having an acoustic model of a target vocabulary (column 6, paragraph 0063);

comparing the input signal to the acoustic prompt model and to the acoustic target vocabulary mode (determine consistency; column 6, paragraph 0063);

determining which of the acoustic prompt model and the acoustic target vocabulary model provides a best match for the input signal during the comparing step (column 6, paragraph 0063);

accepting the best match if the acoustic target vocabulary model provides the best match (column 6, paragraph 0063); and

ignoring the best match if the acoustic prompt model provides the best match (column 6, paragraph 0063), but does not specifically teach mathematically representing the outgoing system voice prompt and receiving an echo.

Jones discloses of accessing data via voice comprising:

generating an acoustic model (acoustic models) of the outgoing system voice prompt, said acoustic prompt model mathematically representing (mathematical representations) the outgoing system voice prompt (columns 4-5, paragraphs 0065-0067), to enable users to interact with the system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hill's method wherein it comprises a mathematical representation, as taught by Jones, to enable users to interact with the system and provide udders-requested data in a verbalized format back to the users (column 1, paragraph 0008).

Hill in view of Jones discloses a method of suppressing speech recognition errors in a speech recognition system, but does not specifically teach receiving an echo.

Johnston discloses an interactive voice response method comprising:

receiving an input signal that comprises at least one user-generated command word and an echo (echo) from an outgoing system voice prompt (outgoing prompt), wherein at least one word of the outgoing system voice prompt is included in the echo received in the input signal (column 5, line 49 – column 10, line 39), to detect the presence of user's commands.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hill in view of Jones method wherein it teach receiving an echo, as taught by Johnston, to detect the presence of user's commands, thereby enabling the apparatus to stop outputting voice-representing signals or speech as soon as the user's response is detected (column 1, line 66 – column 2, line 9).

Regarding **claim 4**, Hill disclose a method wherein the step of generating an acoustic model of the system voice prompt includes the steps of:

sending the speech signal of the outgoing system voice prompt to the speech recognizer (speech recognition engine; column 6, paragraph 0063).; and

generating the acoustic prompt model from the speech signal immediately before the comparing step (generating outgoing speech or prompts; column 6, paragraph 0063).

Regarding **claim 9**, Mitchell disclose a method wherein the step of supplying the input signal to the speech recognizer includes supplying to a simple connected word recognition grammar (grammars), the input signal in parallel with the acoustic target vocabulary model and the acoustic prompt model (column 6, paragraph 0063).

Regarding **claim 10**, it is interpreted and rejected for the same reasons as set forth in claims 1, 11 and 19. In addition, Hill disclose a method of suppressing speech recognition errors and improving word accuracy in a speech recognition system that enables a user of a communication device to interrupt an outgoing voice prompt with user-generated command words that halt the outgoing voice prompt and initiate desired actions, said method comprising the steps of:

storing the acoustic prompt model in a speech recognizer (speech recognition unit; column 6, paragraph 0063);

supplying to an action table, any command word corresponding to the best match provided by the acoustic target vocabulary model (expected caller responses; column 6, paragraph 0063);

identifying from the action table, an action corresponding to the supplied command word (column 6, paragraph 0063);

halting the outgoing system voice prompt (column 6, paragraph 0063); and
initiating the identified action (column 6, paragraph 0063).

Regarding **claims 12 and 20**, Hill disclose a recognizer comprising means for generating the acoustic prompt model from a known text (text-to-speech; column 5, paragraph 0056 – column 6, paragraph 0065).

Regarding **claims 13 and 21**, Hill discloses a recognizer further comprising means for generating the acoustic prompt model from the speech signal of the outgoing system voice prompt prior to playing the prompt (column 6, paragraph 0063).

Regarding **claim 18**, Hill discloses a recognizer wherein the comparer includes a comparison function selected from a group consisting of:

- an arbitrary grammar (grammar; column 6, paragraph 0063);
- a simple connected word recognition grammar (column 6, paragraph 0063); and
- a language model (column 6, paragraph 0063).

7. **Claims 2-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill in view of Jones and Johnston and further view of Backfried et al. (USPN 6,801,893) hereinafter referenced as Backfried.

Regarding **claim 2**, it is interpreted for the same reasons as set forth in claim 1. In addition, Jones discloses a method wherein the step of generating an acoustic model of the system voice prompt is performed in advance of the comparing step and includes the steps of:

determining phonetic units utilized in the outgoing system voice prompt (phonemes; column 4-5, paragraphs 0065-0066)

storing the phonetic units in a phonetic unit database accessible by the speech recognizer (phonemes; column 4-5, paragraphs 0065-0066), but does not specifically teach providing the speech recognizer with an orthographic text of the prompt prior to playing the prompt and building the prompt model by the speech recognizer, said speech recognizer selecting and concatenating appropriate phonetic units based on the orthographic text of the prompt.

Backfried teaches a method including the steps of:

providing the speech recognizer with an orthographic text of the outgoing system voice prompt prior to playing the prompt (figure 1, element 101 with figure 4 and column 4, lines 21-38); and

building the prompt model by the speech recognizer, said speech recognizer selecting and concatenating appropriate phonetic units based on the orthographic text of the outgoing system voice prompt (figure 1, element 105 with figure 4 and column 1, lines 43-55), for adding new words with yet unseen spellings and pronunciations to the vocabulary of a speech system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hill in view of Jones and Johnston's method wherein it includes the steps of storing the phonetic units in a phonetic unit database accessible by the speech recognizer, but does not specifically teach providing the speech recognizer with an orthographic text of the prompt prior to playing the prompt and building the prompt model by the speech recognizer, said speech recognizer selecting and concatenating appropriate phonetic units based on the orthographic text

Art Unit: 2626

of the prompt, as taught by Backfried, to add new words to a vocabulary which leads to reduced user frustration and an improved perception of system usability (column 3, lines 44-46).

Regarding **claim 3**, it is interpreted for the same reasons as set forth in claim 1. In addition, it disclose a method wherein a plurality of system voice prompts are stored in a system prompt database accessible by a prompt server that plays selected prompts, and phonetic units associated with the plurality of system voice prompts are stored in the phonetic unit database, and wherein the method further comprises, prior to supplying the input signal to the speech recognizer, the steps of:

instructing the prompt server to select and play a selected outgoing system voice prompt (Johnston, instructs; column 5, line 49 – column 6, line 39);

informing the speech recognizer which outgoing system voice prompt (prompt) is going to be played (Johnston, column 5, line 49 – column 6, line 39); and

retrieving by the speech recognizer, phonetic units from the phonetic unit database that are appropriate for an acoustic prompt model corresponding to the selected outgoing system voice prompt (Jones, phonemes; columns 4-5, paragraph 0065-0066).

8. **Claims 6 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill in view of Jones and Johnston and in further view of Mitchell.

Regarding **claims 6 and 15**, Hill in view of Jones and Johnston discloses a method of suppressing speech recognition errors in a speech recognition system, but does comparing, determining and ignoring one out-of-vocabulary word model, and at least one noise model.

Mitchell disclose a method further comprising the steps of:

comparing the input signal to a silence model, at least one out-of-vocabulary word model, and at least one noise model (column 3, lines 28-67;

determining whether one of the silence, out-of-vocabulary, or noise models provides the best match during the comparing step (best match; column 3, lines 28-67 and column 4, lines 6-13 with column 5, lines 38-43); and

ignoring the best match if one of the silence, out-of-vocabulary, or noise models provides the best match (ignore contentless sound energy; column 1, lines 52-56 with column 3, lines 27-66),, to allow users to interrupt a prompt and provides speech input at an earlier times.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hill in view of Jones and Johnston's method as described above, to disable the audio prompt once the ASR system recognizes that the user has begun speaking in response to the current audio prompt (column 1, line 17-28).

9. **Claims 7-8 and 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill in view of Jones, Johnston and Mitchell and in further view of further view of Bridges (USPN 5,978,763).

Regarding **claims 7 and 16**, it is interpreted and rejected for the same reasons as set forth in claim 1. In addition, Mitchell discloses a method wherein the step of comparing the input signal to a silence model (silence), at least one out-of-vocabulary (out-of-vocabulary) word model, and at least one noise model (garbage; column 3, lines 27-66), but does not specifically teach a method wherein the comparing step includes comparing the input signal to a noise model that represents background babble.

Bridges discloses a method wherein the comparing step includes comparing the input signal to a noise model that represents background babble (background noise from a telephone conversation; column 1, lines 19-23), to take account of background noises.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hill in Jones, Johnston and Mitchell's method wherein the comparing step includes comparing the input signal to a noise model that represents background babble, as taught by Bridges, to allow for the correct action to take place, even when there is noise present (column 1, lines 10-24).

Regarding **claims 8 and 17**, it is interpreted and rejected for the same reasons as set forth in claim 1. In addition, Mitchell discloses a method wherein the step of comparing the input signal to a silence model (silence), at least one out-of-vocabulary

(out-of-vocabulary) word model, and at least one noise model (garbage; column 3, lines 27-66), but does not specifically teach a method including comparing the input signal to a noise model that represents background car noise.

Bridges discloses a method including comparing the input signal to a noise model that represents background car noise (noise of a car's engine; column 1, lines 19-23), to take account of background noises.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hill in Jones, Johnston and Mitchell's method including comparing the input signal to a noise model that represents background car noise, as taught by Bridges, to allow for the correct action to take place, even when there is noise present (column 1, lines 10-24).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R. Jackson whose telephone number is 571-272-7619. The examiner can normally be reached on Monday-Friday from 5:30am-2:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRJ

September 28, 2007



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